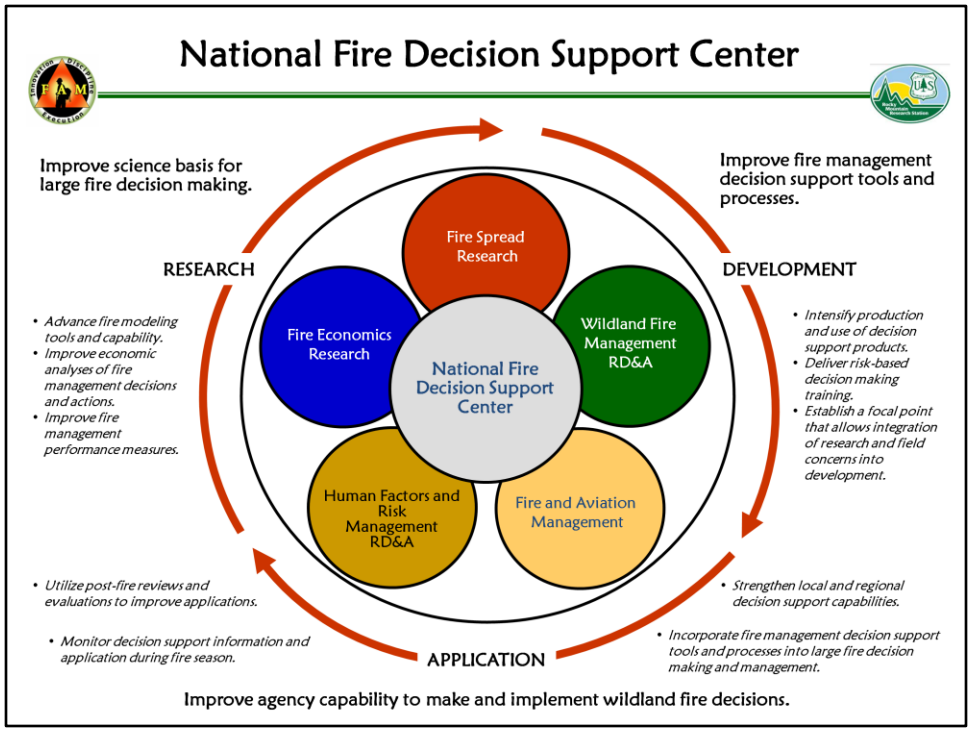
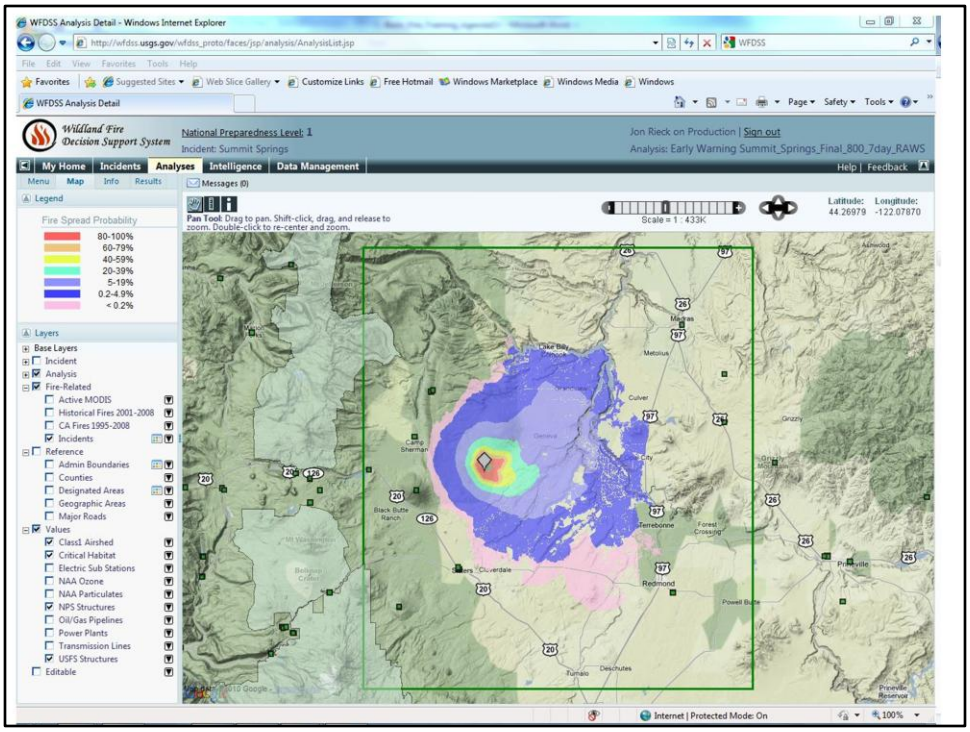
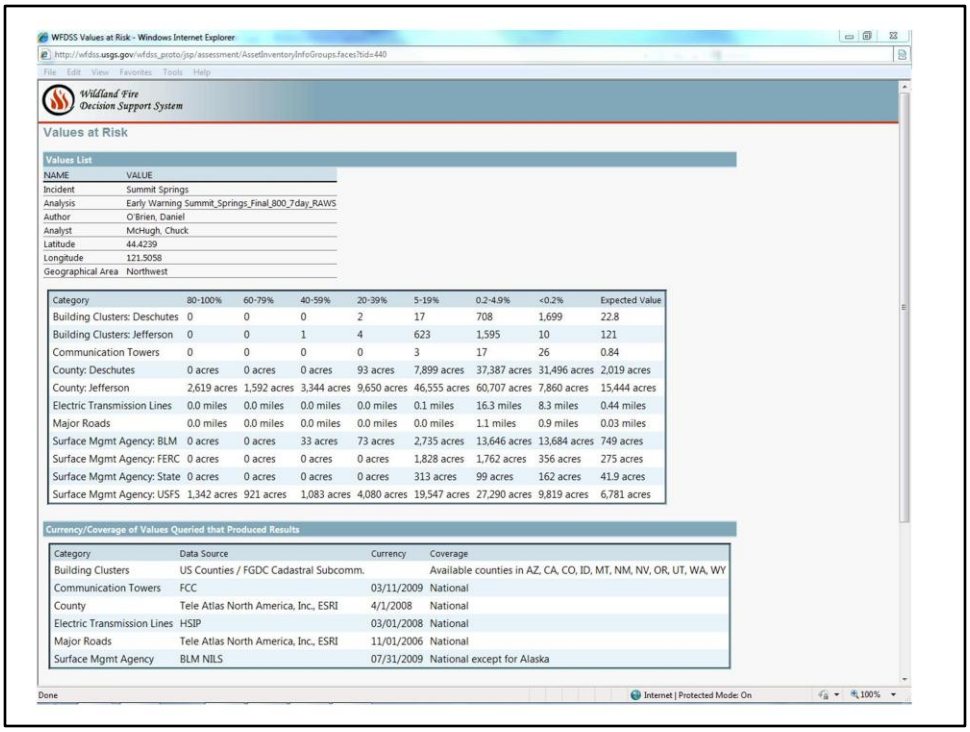


This presentation was provided by Dave Calkin of the Missoula Fire Sciences Laboratory and describes the current state of the what was previously known as the RAVAR team (Rapid Assessment of Values at Risk) and how RAVAR assessments will be handled in the future.

This slide illustrates the components of the National Fire Decision Support Center (NFDSC). The Fire Economics Research portion is just one section of the entire NFDSC team, and consists of what was previously known as the RAVAR team (Rapid Assessments of Values at Risk). The RAVAR team is in the process of handing off analysis duties to other members of the NFDSC (under Lisa Elenz) within the Wildland Fire Management Research Development and Application group (WFM RDA). However there is still a lot of training to do before the hand off is complete. The plan for the future is for the Fire Economics Research group to get back to doing research and have the application duties handled by the WFM RDA, however close interaction between both groups will remain. The Fire Economics Research team would also like to see regions and GAs taking control/responsibility for resources in their own areas in the future and the RAVAR team can assist with training.



This is a current image of a Fire Spread Probably (FSPro) output displayed with a Values Assessment within WFDSS.



WFDSS Values at Risk - Windows Internet Explorer

http://wfdss.usgs.gov/wfdss_proto/jsp/assessment/AssetInventoryInfoGroups.faces?tid=440

File Edit View Favorites Tools Help

Wildland Fire Decision Support System

Values at Risk

Values List

NAME	VALUE
Incident	Summit Springs
Analysis	Early Warning Summit_Springs_Final_800_7day_RAWS
Author	O'Brien, Daniel
Analyst	McHugh, Chuck
Latitude	44.4239
Longitude	121.5058
Geographical Area	Northwest

Category	80-100%	60-79%	40-59%	20-39%	5-19%	0.2-4.9%	<0.2%	Expected Value
Building Clusters: Deschutes	0	0	0	2	17	708	1,699	22.8
Building Clusters: Jefferson	0	0	1	4	623	1,595	10	121
Communication Towers	0	0	0	0	3	17	26	0.84
County: Deschutes	0 acres	0 acres	0 acres	93 acres	7,899 acres	37,387 acres	31,496 acres	2,019 acres
County: Jefferson	2,619 acres	1,592 acres	3,344 acres	9,650 acres	46,555 acres	60,707 acres	7,860 acres	15,444 acres
Electric Transmission Lines	0.0 miles	0.0 miles	0.0 miles	0.0 miles	0.1 miles	16.3 miles	8.3 miles	0.44 miles
Major Roads	0.0 miles	0.0 miles	0.0 miles	0.0 miles	0.0 miles	1.1 miles	0.9 miles	0.03 miles
Surface Mgmt Agency: BLM	0 acres	0 acres	33 acres	73 acres	2,735 acres	13,646 acres	13,684 acres	749 acres
Surface Mgmt Agency: FERC	0 acres	0 acres	0 acres	0 acres	1,828 acres	1,762 acres	356 acres	275 acres
Surface Mgmt Agency: State	0 acres	0 acres	0 acres	0 acres	313 acres	99 acres	162 acres	41.9 acres
Surface Mgmt Agency: USFS	1,342 acres	921 acres	1,083 acres	4,080 acres	19,547 acres	27,290 acres	9,819 acres	6,781 acres

Currency/Coverage of Values Queried that Produced Results

Category	Data Source	Currency	Coverage
Building Clusters	US Counties / FGDC Cadastral Subcomm.		Available counties in AZ, CA, CO, ID, MT, NM, NV, OR, UT, WA, WY
Communication Towers	FCC	03/11/2009	National
County	Tele Atlas North America, Inc., ESRI	4/1/2008	National
Electric Transmission Lines	HSIP	03/01/2008	National
Major Roads	Tele Atlas North America, Inc., ESRI	11/01/2006	National
Surface Mgmt Agency	BLM NILS	07/31/2009	National except for Alaska

Done

Internet | Protected Mode: On

100%

In WFDSS building clusters are tabularly identified instead of spatially located. Mapping products are available. Spatial mapping of features is not automated in WFDSS, but NFDSC personnel and some the Economics Research team members (during high demand periods) will be available to assist with this in the coming fire season. There may be some need to manage the demand based on the scale and significance of the event so real time support can be given to priority fires. Every fire does not need the same level of analysis.

Cadastral Data Accuracy

- Recently completed assessment of the accuracy of structure identification using cadastral data (primary WFDSS source) compared with high quality GPS structure locations in Gallatin County MT
- Confirmed cadastral data as appropriate tool to identify structures on private land for **strategic** management
- Quantified error rates

In an assessment of the accuracy of structure identification using cadastral data (WFDSS Data source) this data was compared it to high quality GPS points (example location: Gallatin Country MT). Findings confirmed that the cadastral data is appropriate for strategic management. This data is not appropriate for tactical decisions, as data needs local validation and verification.

This slide shows the assessment example area in Gallatin County MT. Green squares denote the GPS points of actual structure locations. Black triangles show cadastral data location of a structure or structure clusters. Cadastral data places structures in the center of a parcel. Although there is a shift in locations most structures were represented in the cadastral data set.

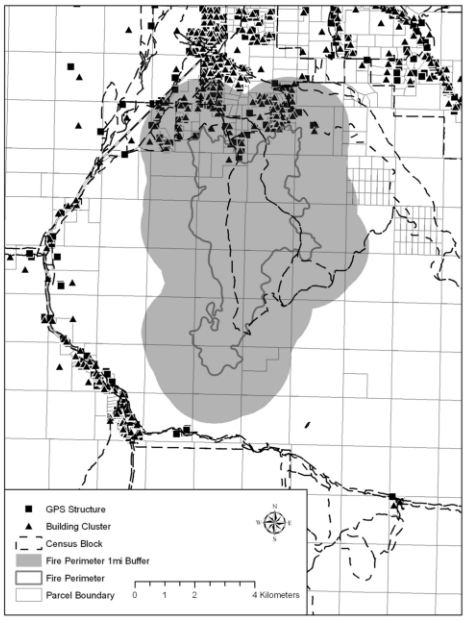
Accuracy of Cadastral Data (Gallatin County MT Study)

Relationship Case		Count	%	Assessment
a.	1 : 1	12049	41.1%	accurate
b.	0 : 0	12996	44.3%	accurate
c.	1 : many	1282	4.4%	accurate: undercount
d.	1 : 0	2018	6.9%	false positive
e.	0 : 1	752	2.6%	false negative
f.	0 : many	207	0.7%	false negative
		29304	100%	

This slide illustrates the accuracy rate of the cadastral data to actual structures. Relationship 1:1, there were 12049 locations where 1 structure in the cadastral data was accurately represented by 1 structure on the ground. This made up 41.1 % of the study area. There were 12996 locations were the cadastral data displayed no structure and the actual location had no structure (0:0 relationship). This made up 44.3% of study area. A combination of the accurate 1:1 relationships and the 0:0 relationships make up 85% of the data.

Data that was undercounted included the 1:many relationship in which, for example mobile homes or condos, were on the site but only 1 structure was identified in the cadastral data. Therefore the structure number was under accounted for (4.4% of data). 6.9% of the data produced a false positive (1:0), where a structure was listed in the cadastral data that did not actually exist on the ground. 2.6% of data produced a false negative where no structure was shown in the cadastral data however a structure did exists and .7% of the data produced a false negative where more than one structure existed and the cadastral data showed no structures. The error rate of c. d. e. and f. was 10%, half of the error rate was associated with shifts in locations. The cadastral data only represents the private land not public lands.

Table 7 - SILVIS Data results for WUI Fire Example



•91 Building Clusters identified within the 1 mi buffer

•104 GPS Structure Points identified Within the 1 mi buffer

Type	Hectares (ha)	Percent
Low Density, Interface	53.15	0.79
Low Density, Intermix	231.39	3.43
Medium Density, Interface	3.86	0.06
Medium Density, Intermix	3.87	0.06
Uninhabited, No Vegetation	85.28	1.26
Uninhabited, Vegetation	1,155.70	17.14
Very Low Density, No Vegetation	222.55	3.30
Very Low Density, Vegetation	4,986.33	73.94
Water	1.42	0.02

Silvis data is used to provide information on habited vs. uninhabited public land.

Natural and Cultural Resources (NCR)

- OIG, GAO, 2008 Large Fire Review all criticize the focus on private land values at the expense of natural resources
- Data collection of regionally (GA) significant NCR data for RAVAR has not progressed.
- Responsibility for identification, acquisition, and incorporation within WFDSS lies within the region/GA

In order to get a better product out of WFDSS, WFDSS needs the best and most complete natural/cultural resource data layers available from the regions/GAs.

Natural and Cultural Resources

- Ongoing wildfire risk assessments and direction for the cohesive strategy require investment in GA scaled NCR inventories
- Realization of WFDSS potential to inform and develop spatial fire management plans requires units acquire these data
- NCR data and local interpretation will improve WFDSS analyses

In order to produce better and more informed risk assessments an investment is needed in GA scaled natural and cultural resource inventories. In order for WFDSS to inform fire management, units must acquire these data.

GA RAVAR staff

- Team sees significant value in training cadre of GIS analyst to conduct RAVAR in each GA
- Analysts can form dual function – data acquisition (off season) product delivery (in season)
- Efforts will have significant payoff beyond WFDSS and fire management.

The RAVAR team thinks training a cadre of people at the GA level (specifically GIS persons) will be beneficial to providing RAVAR analysis during fire season. These persons could provide assistance year round, by gathering data in the non-fire season, and producing analysis during fire season. Payoffs for this data acquisition and analysis skills extend beyond completing WFDSS decisions during fire season.

Training

- Missoula Fire Economics Group will provide webinar and/or in person training if a sufficient cadres is identified.
- Fire Economics Group will have field analysts supporting NIMO teams and pursuing a research study this season. Analysts may be available for RAVAR production or real time training.

The Missoula Fire Economics team will provide training when requested if cadre of individuals is available and interested. The Fire Economic folks will have analysts working with the NIMO teams this summer and conducting research.

Risk Assessments

- Methods:
  http://www.fs.fed.us/rm/pubs/rmrs_gtr235.html

- Preliminary CONUS results:
  http://www.arcfuels.org/risk/CONUS_Risk_Assessment_Final.pdf

These two documents provide more information about the methods and results from the Economic Research teams risk assessments.

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